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ABSTRACT

The report examines the identification of potentially handicapping conditions in an adolescent population using data from the National Center for Health Statistics' survey (approximatey 8,000 adolescents selected in 1968). Identification of the following disabilities were examined: hearing impairment, vision problems, orthopedic handicaps, mental retardation, emotional disturbance, speech impairments, and slow learner problems. Data were gathered through school questionnaires, household and parent questionnaires, physical examinations, vision and audiometry tests, and psychological examinations. Among results discussed are that parent responses tended to produce higher estimates of handicapping conditions than teacher recommendations and test information: there were significant differences in the rate of identification among socioeconomic and demographic groups: and the rate at which teachers identified the need for special education resources dramatically declined with student age. Findings generally supported those from a previous study of 6 to 11 year olds which found that there is sometimes wide variation in the rates that result from the application of different indicator sets for a particular handicap, and the overlap between identified groups is generally quite small. (CL)

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IDENTIFICATION OF HANDICAPPED STUDENTS (AGES 12-17) USING DATA FROM TEACHERS, PARENTS AND TESTS

Research Note 24

September 1979

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Prepared for:

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RESEARCH NOTE 24

A Research Note is a working paper that presents the results of study related to a single phase or factor of a research problem. It also may present preliminary exploration of an educational policy issue or an interim report which may later appear as a larger study. The purpose of the Research Note is to instigate discussion and criticism. It presents the concepts, findings, and/or conclusions of the author. It may be changed, expanded, or withdrawn at any time.

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EXECUTIVE SUMMARY

This research note examines the identification of potentially handicapping conditions in the adolescent population using data from the National Center for Health Statistics (NCHS), Cycle III Survey of Youth, Aged 12-17 and is an extension of work reported on in Research Report 4537-11 titled, Studies of Handicapped Students, Volume II: Teacher Identification of Handicapped Pupils (Ages 6-11) Compared with Identification Using Other Indicators.

The work reported in this Research Note was conducted by the Educational Policy Research Center (EPRC) at SRI International (SRI) jointly for the Assistant Secretary for Education and the National Center for Education Statistics. This study is part of a larger body of work examining the extent of possible overlap among various special need group populations (e.g., bilingual, handicapped, and compensatory education students). The purpose of the present study was to explore variations in the rates of identification and the characteristics among 12-17 year olds identified as potentially handicapped using information from various sources such as teachers, parents and test data. A further purpose of the study was to compare the results of this analysis of 12-17 year olds with earlier findings in the 6-11 year population as reported in Research Report 4537-11.

It must be stressed that the study is not an attempt either to estimate the prevalence of particular handicaps or to validate the existence of actual need for special educational resources. Rather, the study explores and compares detailed information which has been obtained from a number of different sources (i.e., teachers, parents, tests, etc.) on a group of children (aged 12-17). The study of 12-17 year olds is similar to the earlier study of 6-11 year olds although two points must be kept in mind. First, in the study of 12-17 year olds, data from medical sources was not considered specific enough to be used to establish a

medical indicator of a potentially handicapping condition. Therefore, the study of 12-17 year olds is more restricted in that fewer comparisons among indicators of potentially handicapping conditions can be made. Second, about 3% of the 12-17 year old sample, as compared with .8% of the 6-11 year old group, were not attending school. It was not within the scope of this study to explore the impact that the not-in-school population may have had on the potential need for special school resources in the 12-17 year old population.

The result of the analysis of the 12-17 year old school-aged population seems to confirm and strengthen the findings from the previous study of 6-11 year olds reported in Research Report 4537-11. There is wide variation in rates resulting from the application of different indicator sets for a particular handicap and the overlap between identified groups is generally quite small. No more than 0.5% of the total population was identified by two identifiers for any handicapped category including speech and mental retardation.

As with the earlier study of 6-11 year olds, the application of particular criteria to the 12-17 year old population resulted in significant differences in the rate of identification among socioeconomic and demographic groups. For example, far more boys than girls were recommended by teachers for classes for the mentally retarded and emotionally disturbed. Also, a significantly higher proportion of students identified as needing special resources came from families with low incomes.

With regard to the comparison of rates between the 6-11 year olds and 12-17 year olds, far fewer older students were recommended for special resources than were elementary level students. Only 9.6% of the 12-17 year olds were recommended for special resources by the teacher, compared with 26.6% of the 6-11 year olds. This difference may be due to a decline in prevalence due to remediation of certain handicapping conditions or it simply may reflect an underidentification of the handicapped population. Given this limited study it is not possible to determine the reasons for the significant drop-off in the rate of recommendations for special education resources.

Thus, the estimated need for special services for the handicapped is highly dependent upon definitions and expectations, and the target population can fluctuate dramatically depending upon definitions applied. If the intent is to serve only the most severely handicapped, then definitions can be narrowly applied and the target population will be quite small. However, as the definitions expand to include more categories of handicaps and levels of severity, the target population can also be expected to expand. It is likely that as definitions become broader the potential for overlap with other categorical program populations will increase. The expansion may be hard (or impossible) to control as definitions become ambiguous and all-inclusive.

Results of the 12-17 year old analysis suggest the following conclusions:

- The findings, particularly when compared with those of the 6-11 year old population, strongly suggest the need for continued efforts to clarify criteria and guidelines for eligibility. Such classifications can lead to better identification practices and provide more accurate counts of handicapped students for purposes of allocating Federal dollars and for comparing the eligible population across states.

- The findings point to the need for further understanding of the longitudinal changes that occur across particular handicapping conditions and that may account for the dramatic drop off in potential need from childhood to adolescence.

- The findings underscore the importance of the federal requirement for multiple assessment of children prior to placement in special education programs. Single indicators of need for special education services--whether teacher, parent, or test assessments--should be highly suspect.

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The principal consultants who assisted us in developing indicators from parent, medical, and other sources in the sample, suggesting the possible indication of a handicapping condition, were Suzanne L. Horowitz, Ph.D. and Henrietta G. Parkman, M.D. Dr. Horowitz is an experienced clincial psychologist who has worked in the Child Psychiatry Clinic at Stanford University Medical Center. She is knowledgeable in testing and evaluating children and adolescents with medical, emotional, and learning difficulties, and consults privately with children and their families. Dr. Parkman, a child psychiatrist, has worked with the Child Psychiatry Department at Stanford University Medical School, Agnews State Hospital, and the Santa Clara County Mental Health Clinic in Santa Clara, California.

Dr. B. V. Shah at Research Triangle Institute, created the standard error program used with these data. We would like to express our thanks for his assistance in making the program available to us and for his help during the testing phase.

I INTRODUCTION

This research note examines the identification of potentially handicapping conditions in the adolescent population using data from the National Center for Health Statistics (NCHS), Cycle III Survey of Youth, Aged 12-17 and is an extension of work reported on in Research Report 4537-11 titled, Studies of Handicapped Students, Volume II: Teacher Identification of Handicapped Pupils (Ages 6-11) Compared with Identification Using Other Indicators.

The work reported in this Research Note was conducted by the Educational Policy Research Center (EPRC) at SRI International (SRI) for the Assistant Secretary for Education as part of a larger body of work examining the extent of possible overlap among various special need group populations (e.g., bilingual, handicapped, and compensatory education students). The purpose of the present study was to explore variations in the rates of identification and the characteristics among 12-17 year olds identified as potentially handicapped using information from various sources such as teachers, parents and test data. A further purpose of the study was to compare the results of this analysis of 12-17 year olds with earlier findings in the 6-11 year old population as reported in Research Report 4537-11.

The NCHS data base (Cycle II, 6-11 year olds and Cycle III, 12-17 year olds) represents the most comprehensive national information on school-aged children currently available and is particularly useful for studying questions related to the prevalence or identification of handicapping conditions. The two independent samples (approximately 8,000 children aged 6-11 years old and 8,000 adolescents aged 12-17 years old) were selected by NCHS in 1964, and 1968 respectively, in cooperation with the U.S. Bureau of the Census. Together, the samples were intended to represent the total 6- to 17-year old continental U.S. population with respect to age, sex, race, and characteristics of the place of residence, including region of the country and population size and growth. The

samples are large enough to identify characteristics that are relatively infrequent in the population. The surveys also include extensive data on individuals from a number of sources, allowing standard comparisons to be made across a large number of children.

In the analysis of 12-17 year olds, identifications of the following disabilities were examined: hearing impairment, vision problems, orthopedic handicaps, mental retardation, emotional disturbance, and speech impairments, and slow learner problems. Unfortunately, parents and medical examiners were not asked directly whether they judged the child to be handicapped. However, teachers were asked whether the child needed special education resources for any of the above listed disabilities. In addition, for some categories of disabilities, it was possible to use standard test measurements to identify potential groups of handicapped students.

In the absence of direct observation of handicapping conditions, indicators of potential need for special educational resources were created using information available in the NCHS data files. For both the 6-11 year olds and the 12-17 year olds, the approach was to examine the data file and, with the aid of consultants, establish variables that could be used as indicators either of the need for special educational resources or of the possibility that such a need could exist. For example, information provided by a parent that a child did not say a real word until after age one-and-a-half is not by itself an indicator of a handicapping condition; however, when combined with information about very low birth weight and ill health at age one, the possibility of developmental damage is raised significantly. An audiometric test for hearing is a much more clear-cut indication of hearing difficulties than a teacher's request for special resources for the hearing impaired or a parent noting a hearing problem, but even an audiometric test is not final proof, since some hearing difficulties are transitory.

In developing indicators for the 12-17 year old study, every effort was made to use data items similar or identical to those used for the prior analysis of 6-11 year olds. The two consultants that assisted in this task for the analysis of 12-17 year olds also served on the project

team for the study of 6-11 year olds. It must be stressed that the variables selected as indicators of possible need are not necessarily criteria for determining whether a handicap exists. Thus, this report does not claim to estimate the prevalence of particular handicaps among 6-11 and 12-17 year olds, or to validate the existence of need for special educational resources. Rather, the purpose is to explore variations in the rates of identification and to examine the reported characteristics of children with potentially handicapping conditions.

For the analysis of 6-11 year olds, the population identified by teachers as needing special educational resources was compared with the population identified by indicators developed from medical examination findings, teacher reports of school behaviors, test scores, developmental histories, and parent responses about home behaviors. In the analysis of 12-17 year olds, comparisons were made of teacher recommendations, parent responses about developmental histories and home behaviors, and test information. No medical information was specific enough to be considered indicative of the potential need for special education resources for the 12-17 year old population. (For both 6-11 year olds and 12-17 year olds only teacher recommendations were deemed appropriate for identification as a slow learner.) Table 1 shows the criteria used to establish potential indicators of each handicapping condition.

The questions that framed the 6-11 year old analysis, and that are applicable also to analysis of the 12-17 year old population, are:

- What is the variation in reported rates of potentially handicapping conditions using different indicators of need?
- How likely is it that two or more indicators will in fact identify the same individuals as possibly handicapped?
- How do patterns of identification based on different indicators compare across socioeconomic and demographic characteristics?

An additional question that was asked during the analysis of the data on 12-17 year olds was whether the rate of identification of potentially handicapping conditions differed in the two populations. That is, were there more children identified as handicapped in one age group than in the other?

Table 1

CRITERIA USED TO ESTABLISH INDICATORS

Hearing Handicap

Teacher recommendation:	In response to the question: Are special resources needed or currently being used for this student?
	Checked: Special facilities for the hard of hearing.
Parent responses:	In response to the question: Does he or she have any difficulty hearing?
	Checked: Yes
Audiometric Test:	A reading of 50db or more (ASA) above audiometric zero for speech threshold in the better ear (severe hearing loss).
	A reading of 30db or more (ASA) above audiometric zero for speech threshold in the better ear (moderate and severe hearing loss).

Vision Handicap

Teacher recommendation:	In response to the question: Are special resources needed or currently being used for this student?
	Checked: Special facilities for the visually handicapped.
Visual Acuity Test:	A score of 20/200 or worse on binocular distance acuity, corrected (severe vision impairment).
	A score of 20/100 or worse on binocular distance acuity, corrected (moderate and severe vision impairment).

Orthopedic Handicap

Teacher recommendation:	In response to the question: Are special resources needed or currently being used for this student?
	Checked: Special resources for the orthopedically handicapped.

Table 1 (Continued)

Orthopedic Handicap (Continued)

Parent responses: Checked "yes" in response to one or more of the following questions:

- Has he or she ever had polio?
- Is there anything that prevents complete use of his (her) legs?
- Is there anything that prevents complete use of his (her) arms?

Mental Retardation

Teacher recommendation: In response to the question: Are special resources needed or currently being used for this student?

Checked: Special resource for the mentally retarded.

Parent responses: In response to the question: As far as mental development is concerned how is he or she coming along?

Checked: Too slowly.

OR

Responded to three or more of the following questions:

- Does he or she have any speech defect?

  Checked: Yes

- At what age did he or she start first grade?

  Checked: Seven or older.

- Has he or she wet the bed during the past year?

  Checked: Yes

Table 1 (Continued)

Mental Retardation (Continued)

- As far as physical growth is concerned, how is he or she coming along?

  Checked: Too slowly.

- Has he or she ever had meningitis or sleeping sickness?

  Checked: Yes

IQ Test: Scored 69 or below on the estimated full-scale WISC IQ test.

Emotional Disturbance

Teacher recommendation: In response to the question: "Are special resources needed or currently being used for this student?"

Checked: Special resource for emotionally disturbed.

Parent responses: Either Section A or B

A. Responded to one or more of the following questions plus one question from Section B:

- Has this youth ever been to a mental hospital or guidance clinic?

  Checked: Yes, within the past year.

- Has he (she) even seen a psychiatrist, or a psychologist or have you ever talked to one about him (her)?

  Checked: Yes, within the past year.

B. Responded to three or more of the following questions:

- Some people are calm, others are nervous (tense, high-strung). Which describes him or her the best?

  Checked: Very nervous.

Table 1 (Continued)

Emotional Disturbance (Continued)

- How much trouble was he or she to bring up?

  Checked: A lot.

- In general, how easily does he or she make friends?

  Checked: Has a lot of trouble.

- What was his or her reaction to school during the first few weeks of 1st grade?

  Checked: Was so upset, he got sick.

- At what age did he or she start first grade?

  Checked: Seven or older.

- Has he or she wet the bed during the past year?

  Checked: Yes.

- Has he or she ever had a fit, convulsion or seizure?

  Checked: Yes.

- During the past 4 years, has anyone in the family been in a hospital, an institution or any similar place for more than a three month period?

  Checked: mother (step, foster),
  father (step, foster),
  brother (half, foster),
  sister (half, foster),
  or multiple episodes.

- During the past 4 years, has anyone in the family been unable to work or carry on his usual activities for more than a six month period?

  Checked: mother (step, foster),
  father (step, foster),
  brother (half, foster),
  sister (half, foster),
  or multiple episodes.

Table 1 (Concluded)

Emotional Disturbance (Continued)

- During the past 4 years, has a relative died while living in your household?

  Checked: mother (step, foster), father (step, foster), brother (half, foster), sister (half, foster), or multiple episodes.

Speech Handicap

Teacher recommendation: In response to the question: Are special resources needed or currently being used for this student?

Checked: Speech therapy.

Parent responses: In response to the question: Does he or she have any speech defect (like stuttering, stammering, lisping, etc.)?

Checked: Yes.

Slow Learner

Teacher recommendation: In response to the question: Are special resources needed or currently being used for this student?

Checked: Special resource for slow learners not classed as mentally retarded.

Findings from all the analysis questions will be presented later in this paper. First, elements of the 12-17 year old data base will be described.

II ELEMENTS OF THE DATA BASE

Data for the 12-17 year olds came from several sources, which will be described briefly in this section. For a complete discussion of the NCHS Cycle III data sources, see Plan and Operation of a Health Examination Survey of U.S. Youths, 12-17 Years of Age, Series 1, No. 8.

School Questionnaire

School information, from public, private or parochial schools, was collected on 91.8% of the youth in the sample. The school questionnaire solicited teacher assessments of the students' academic and intellectual ability, classroom and interpersonal behaviors, social adjustment, and the teacher's perceived need for special education resources. Teacher recommendations for special educational resources for the 12-17 year old population are tallied in Table 2.*

Household Questionnaire

A household interview questionnaire was one of three instruments used to collect data from parent sources. The household questionnaire provided demographic and socioeconomic status data on each youth in the survey. The NCHS population distribution for each socioeconomic and demographic variable examined in the study is presented in Table 3.

Parent Questionnaires

Parents were asked to complete two questionnaires. The first, a self-administered form, provided information about the youth's medical history

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*An additional 1% of the total school population were identified as requiring "other" resource(s). However, because information regarding the nature of "other" resources was not available either on the data file or from NCHS, that category of special resource was not included in this study. Note that all tables can be found at the end of this paper.

and current health status. Another questionnaire, administered by the NCHS interviewer, provided information about the parent's assessment of the youth's behavior and interpersonal relations at home.

Physical Examination

A standardized physical examination by a physician was completed for each youth in the survey. The examination included:

- An overall inspection including observed physical deformities, temperature, observation of gait, and observations of general appearance such as tics, nail-biting, and thumb-sucking.
- An examination of joints and muscles, during which the physician noted any abnormality in the performance of specific movements.
- An eye examination including inspection for styes, crossed eyes, etc.
- An ear, nose, and throat examination, and a cardiovascular examination in which measures of blood pressure, heart sounds, and an electrocardiogram were taken.

Vision and Audiometry Tests

Standard vision and audiometry tests were administered to all sample youth by specially trained technicians. Visual acuity distance tests were given both with and without glasses for youth who normally wear glasses.

Psychological Examination

A battery of achievement and psychological tests was individually administered to each youth in the sample. Because this information was collected independently of the school questionnaire, test data are available for youth who were not in school as well as for youth in school for whom other school data were not available. The following tests were administered:

- Vocabulary and Block Design subtests from the Weschler Intelligence Scale for Children (WISC).*
- Harris-Goodenough Draw-a-Person Test.†
- Arithmetic and reading sections of the Wide Range Achievement Test (WRAT).†

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*The WISC is an appropriate test of intelligence for individuals aged 5 to 15 years, 11 months. Use of the WISC for youths aged 16 or older tends to underidentify the number of individuals who would have difficulty with the test. For more details regarding the standardization and accuracy of the test, refer to Research Report 4537-11, Studies of Handicapped Students, Volume II, Chapter IV and Appendix B.

†Not used in this study.

III INTERPRETATION OF DATA

Analyses Methods

The analysis of the NCHS data consists of tabulations of the rates at which there was an indication of possible need for special educational resources based on each established set of indicators. The rates are expressed as the percent of the 12-17 year olds who were identified by an indicator set. Rates across socioeconomic and demographic groups describe the percent identified out of all those in the socioeconomic category (e.g., youth in families with incomes less than $3,000).

Examination of these data was concerned not only with overall and relative rates of identification based on different sets of indicators, but also with the extent to which there was agreement between the various indicators of possible need. Overall rates may appear to be similar, but little agreement may exist as to which individuals have been identified. For example, two different sets of indicators may each yield an estimated rate of 4%, and yet the two sets of individuals identified can be mutually exclusive. Therefore, the agreement between indicators was assessed by tabulating the percent of youth identified by each set of indicators alone, the percent identified by both sets of indicators, and the percent identified by neither set. Figure 1 illustrates two ways to present these relationships.

In the examples presented in Figure 1, 12% (7% + 5%) of the total population are identified by indicator Set A, and 15% (7% + 8%) by indicator Set B, while 7% are identified by both A and B. Of the total population, 20% (5% + 7% + 8%) are identified by at least one indicator set and 80% are not identified by either indicator set. Note that of the group identified by indicator Set A (12%), 58 out of 100 (or the identified 7% of 12%), were also identified by indicator set B. The total identified group (20%) is further detailed in the diagram extended by dotted lines in Figure 1(a) and on the second line in Figure 1(b). Note that 25% of the total identified population are identified only by Set A

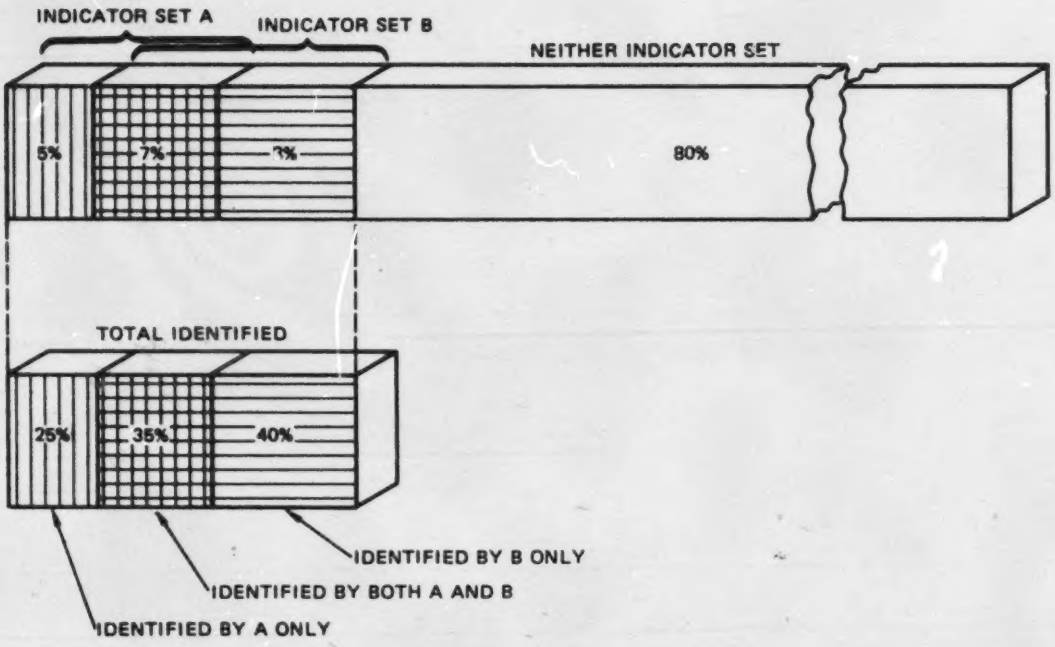

FIGURE 1(a) ILLUSTRATION SCHEME USED TO DETAIL AN IDENTIFIED POPULATION

	Yes A Only	Yes B Only	Both A & B	Neither
Indicator Set A Compared with (X) Indicator Set B	5%	8%	7%	80%
Total Identified (100%)	25%	40%	35%	

FIGURE 1(b) TABULAR FORM USED TO DETAIL AN IDENTIFIED POPULATION

and 40% are identified only by Set B, while 35% are identified by both indicator sets. As illustrated in the upper bar, the 35% identified by both indicator sets represents more than one-half of the population identified by Set A.

The preceding discussion is intended to facilitate interpretation of the analysis results and to assist the reader in comparing findings in the study of 6-11 year olds with those reported here on 12-17 year olds.

Methodological Considerations

The following discussion is intended to explain some methodological aspects of the analyses performed on the data.

The findings in this report are based on analysis of data from a final sample of 6,768 adolescents aged 12-17 years who were selected to represent the total population of individuals in their age group. Although NCHS took extraordinary care in the design of the survey and collection of the data, as with all such sample surveys, it is still possible that errors may be present in the data. A common statistical technique used to evaluate the extent to which findings based on a sample may be attributed to the total population is the standard error of estimate. By performing approximate statistical tests with standard error values it is possible to determine the extent to which differences between groups in the sample are likely to be due to a real difference in the population itself. In this report standard errors were generated using a method developed for complex multi-stage sample surveys such as the NCHS Cycle III survey. (The method is called a first order Taylor approximation of the deviation of estimates from their expected values.)

In some cases, the rates of potentially handicapping conditions displayed in this report are extremely low and the standard errors are equal to or larger than the estimated rates themselves. In such cases, the reported rates are of little value except to indicate that the true population is probably quite small. These cases have been noted in the tables and extreme caution should be exercised in making broad generalizations where very low reported rates are accompanied by large standard errors.

The reader should be cautioned against assuming a greater degree of precision than actually exists in the estimated rates of potentially handicapping conditions reported here. Care has been taken to note all caveats in the presentation and interpretation of findings. Despite these cautions to the reader, the data are of significant value for public policy purposes. It is possible to compare a wide variety of factors across a large nationally representative sample of children and youth using uniform definitions and data to suggest variations in possible target populations.

IV ANALYSIS RESULTS

The results of the analysis of data on 12-17 year olds are presented below, including a brief description of the 12-17 year old population of which the data are representative, and the potential rates of handicapping conditions in the 12-17 year old population using various indicators of need. Also discussed is the extent of overlap among identified groups as well as the socioeconomic and demographic characteristics of each group. Finally, the results of the analysis of children, aged 6-11, are compared with the findings for youth, aged 12-17.

Population Characteristics

Using weighting factors provided by NCHS,* estimates were generated for the larger group of youth of which the sample is representative. Table 3 presents the demographic and socioeconomic characteristics of the population of youth.†

Table 4 shows the distribution on selected demographic and socioeconomic characteristics of youth in school with school data, those in school without school data, and those not in school. Of the youth examined about 8% had no school questionnaire on file. About 3% of the total

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*A weighting factor is calculated based on sampling design and generally reflects the probability that an individual will be selected. It indicates the number of individuals in the total population of which the child is representative.

†The NCHS Cycle III survey tabulated only three categories for race: Negro, which included Blacks; White, which included Whites and Latinos (no distinction was made among Mexican-Americans and other Hispanic-background groups); and "other" which included American Indians (but not Mexican-Americans), Chinese, and all other races not white or black (e.g., Japanese, Polynesian, East Indian). Because the "other" category was only 1.0% of the total sample, and because it was impossible to isolate specific ethnic categories within the "White" category, this study has considered only two groups of youth: "Black" and "White," with the "White" category including all other except Blacks.

sample (or 38% of those with no school data), reported that they were not attending school. The remaining children with no school information on file reported that they were in school, but this information cannot be verified because no school data were available for these persons. Of youth not in school, 43% were from the South and 58% had family incomes under $5,000 in 1968 (the date of the survey). For children in school with data, only 22% were from the South and 23% had incomes under $5,000. As expected, most youth not attending school were 16 years old or older (85%). The following discussion presents results of the analysis of the group of youth in school with school data available.

Application of Indicator Sets to the 12-17 Year-old Population

Comparison of Overall Rates

As can be seen in Table 5, each indicator set identifies a different rate for each handicapping condition. Parent's responses tended to produce a high estimate relative to teacher recommendations and test information. In all categories except emotional disturbance, the parent indicator set identified at least twice as many youth as did the teacher. For instance, parent responses identified 3.56% of the youth as mentally retarded, while teachers identified 1.33%.

Test information was also available for three categories (hearing impairment, vision problems, and mental retardation), thus providing an alternative estimate of the rate of potentially disabling conditions. On the surface, test data appear to identify similar numbers of 12-17 year olds with potential handicaps as do teachers. For example, with test data, the 12-17 year olds were identified as having moderate to severe hearing problems at a rate of 0.30%; teachers identified 0.26% of the youth as needing special resources for hearing impairment. Similarly, teachers identified 1.33% of the 12-17 year olds as needing special resources for the mentally retarded and 1.96% of the population had estimated full-scale IQs below 69, according to test information. Despite similar overall rates, however, indicator sets identify different populations of youth and the size of the groups identified by at least two indicators is very small.

Extent of Agreement of Different Indicator Sets

Of greater interest than overall rates is whether teacher, parents and test information identify the same individuals. Table 6 shows the extent of overlap between identified groups for each handicap. For example, in Table 6 the first comparison under the category "hearing handicap" shows that teachers recommend 0.3% (0.1% + 0.2%) while parent responses identify 3.7%. The proportion of 12-17 year olds identified by both criteria was only 0.2% of the total population. As shown in the last column of Table 6, the overlap represents about 4% of all those identified by either teachers or parent responses as possibly hearing impaired.

In each case where two indicator sets were applied to identify a potential handicapping condition, the percentage of youth identified by both criteria was very small. For physical and sensory handicaps (vision, hearing, orthopedic problems) the overlap ranged from zero to 0.2% of the total population. For mental retardation and speech handicaps, about 0.5% of the total population were identified by at least two indicators.

Parent responses more often agreed with teacher recommendations in the categories orthopedic, hearing, and speech handicaps. For orthopedic and speech problems, about 50% of the 12-17 year old group identified by teachers were also identified by parent responses. Parents noted hearing problems in 66% of the group teachers recommended for special services for the hearing impaired (0.2% of 0.3%).

As might be expected, in the areas of mental retardation and emotional disturbance there was less agreement between indicator sets. Of the population identified by teachers as needing special resources for the mentally retarded, 30% had IQ's below 69 (as identified by IQ test information).* This represents about .4% of the total 12-17 year old population. Fewer 12-17 year olds (0.2%) were identified by two indicators as potentially emotionally disturbed. And, parent responses identified only 18% of those recommended by teachers for services for the emotionally disturbed.

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*See Research Report 4537-11, Studies of Handicapped Students, Volume II for a discussion of the issues surrounding identification of the mentally retarded.

Socioeconomic and Demographic Patterns

One question explored by this analysis is the extent to which handicapping conditions are distributed evenly across socioeconomic and demographic characteristics in the 12-17 year old population. It is important to note that the concern is not with absolute rates or with the "true" handicapped population, but with distributional patterns. Each indicator set identifies a potential handicapped group. Analysis of patterns within each group indicates the extent to which the application of particular indicator sets affects the reported demographic and socioeconomic characteristics of the handicapped group identified.

Tables 7-13 present the rates at which individuals in each socioeconomic and demographic group are identified by each set of indicators for each handicap category. For example Table 7 shows data for potential hearing-impaired groups. Among the youth from families with incomes under $3,000, parent responses identified 6.99% as hearing-impaired, whereas among families with incomes over $15,000, parent responses identified only 1.49% as hearing impaired. It should be noted that in some cases the size of the demographic or socioeconomic group was too small to permit comparisons (such groups are marked on each table and should not be considered in the analysis). Standard errors for rates are also presented in Tables 7-13.

In order to facilitate comprehension of the extensive amount of information presented in Tables 7-13, we have summarized the significant differences among socioeconomic and demographic groups by handicap and identifier in Table 14. As shown, significant differences across race and income occur for each indicator of mental retardation (teacher, parent, and test). For teacher and parent indicators of mental retardation, boys are more likely to be identified than girls. The same sex differences also are significant for teacher and parent identification of potentially emotionally disturbed youth and teacher identification of the speech-impaired.

Comparisons of Findings for 6-11 Year Olds with Findings for 12-17 Year-Olds

The approach to analyzing each data set (Cycle II and Cycle III) was to develop indicators from specific data elements. In many cases it was possible to use the same criteria for indicators in the 12-17 year old population as were used for 6-11 year olds because the same kinds of data and often the same data items were collected for each survey. Therefore, the rates for some indicator sets are directly comparable for the two age groups. Table 15 shows the rate of possible need for special resources for 6-11 and the 12-17 year old populations.

For hearing impairment, the rate at which teachers and parents identify 12-17 year olds is somewhat smaller than the rate at which they identify 6-11 year olds. However, audiometric test results indicated that more 12-17 year olds (.3%) than 6-11 year olds (.1%) may have hearing impairments that require special resources.

For comparable identifiers (e.g., teacher recommendations), the rate of identification appears to drop for the older age group for the categories of orthopedics (0.4% for 6-11 year olds versus 0.2% for 12-17 year olds, for teacher-identified), emotional disturbance (3.4% versus 1.2% for teacher-identified), and speech impairments (6.3% versus 1.1% for teacher-identified).

Patterns of socioeconomic and demographic differences also were examined. Of interest is whether similar differences (such as different rates of identification for low-income versus high-income groups) emerge for both age cohorts. For this analysis comparisons were made only of those groups of 6-11 and 12-17 year olds for which identical indicators were available (e.g., an IQ test cutoff of 69 or a teacher recommendation for "services for the mentally retarded"). This comparison included all teacher-recommended groups; parent and test-identified groups for hearing; and those identified by the IQ test in mental retardation. As shown in Table 16, there are consistent socioeconomic and demographic differences in the identification of both age cohorts. For instance, for both 6-11 and 12-17 year olds, teachers were likely to recommend more boys than girls for services for mental retardation and emotional disturbance. On

several socioeconomic and demographic dimensions (race, income, age), the IQ test criteria resulted in higher identification rates for certain groups of both children and youth. For mental retardation, more black members of both age groups were recommended for services than were white members. There were no significant differences for either age group in teacher recommendations for orthopedic services and teacher and audiometric test identification of hearing impairments.

V SUMMARY AND CONCLUSIONS

This study of the identification of potentially handicapped students was conducted as part of a larger piece of work exploring the overlap among special need group populations in public schools. The potential overlap between bilingual, compensatory education, and handicapped students raises questions concerning the possible duplication of federal expenditures for categorical programs and the quality of educational services being delivered to children at the local level. The identification of the handicapped population is, in itself, an issue that affects both federal policy in the area of program overlap and in the provision of educational services to handicapped students under PL 94-142.

This paper explores the application of various indicator sets to the identification of potentially handicapped individuals in the 12-17 year old population using data from the National Center for Health Statistics. The study has been exploratory and does not claim to establish the prevalence of handicapping conditions. Rather, the study examines the characteristics of and overlap among groups of individuals who are identified as potentially handicapped using a variety of information sources. The study is not as comprehensive as the previous report on 6-11 year olds published as Studies of Handicapped Students, Volume II.

As with the earlier study of 6-11 year olds, the application of particular criteria to the 12-17 year old population resulted in significant differences in the rate of identification among socioeconomic and demographic groups. For example, far more boys than girls were recommended by teachers for classes for the mentally retarded and emotionally disturbed. Also, a significantly higher proportion of students identified as needing special resources came from families with low incomes.

The most significant finding of the analysis of the 12-17 year old population is the dramatic decline in the rate at which teachers identified the need for special education resources in school. Far fewer

12-17 year olds were identified by teachers as requiring special resources than were 6-11 year olds. While teachers recommended resources for 26.6% of the 6-11 year population, they recommended similar services for only 9.6% of the 12-17 year olds. This difference may be due to an actual decline in the need for special resources because of remediation over time, or the difference may reflect an underidentification of the population needing special resources. Given the limited nature of this study it has not been possible to explore in any depth the possible reasons for the significant drop-off in the rate of recommendations for services as was done in Volume II.

Generally, the results of the 12-17 year old analyses appear to confirm and strengthen the findings from the previous study of children aged 6-11 years; there is sometimes wide variation in the rates that result from the application of different indicator sets for a particular handicap, and the overlap between identified groups is generally quite small. For example, no more than 0.5% of the total 12-17 year old population was identified by any two identifiers for any handicap category, including speech and mental retardation.

The findings of SRI's analysis of NCHS data on 6-11 year olds and 12-17 year olds raise anew the question of the accuracy of the percentage of children that may be considered for Federal entitlement purposes. In light of the fact that the recent State child counts for handicapped students fall far short of the expected allowable 12% of the total school population, one is led to speculate about possible reasons for this difference. As indicated by analysis of the NCHS data a requirement for multiple assessment tends to reduce substantially the size of the eligible handicapped population. For instance, based on teacher recommendations alone, approximately 1.3% of the school population would be classified as mentally retarded; however, using both teacher recommendations and scores on an IQ test (a score less than 69) only 0.4% of the school population are identified--a drop off of more than 60%.

The NCHS findings also lead to speculation of another kind regarding the low state counts. PL 94-142 was the first call for an <u>unduplicated</u> count of special education children being served. In the past, all

child counts have been based on the number of services being received. Thus, a mentally retarded child might be receiving classes for the mentally retarded and speech therapy and thus would be counted twice. In the analysis of 6-11 year olds, nearly 4% of the population were recommended by teachers for two or more special resources. These findings suggest the need to further explore the extent to which the previous practice of multiple counting and the requirement for multiple assessment might account for the difference between the expected and currently reported rates of need.

These results also lead us to the following conclusions:

- The findings, particularly when compared with those of the 6-11 year old population, strongly suggest the need for continued efforts to clarify criteria and guidelines for eligibility. Such clarification can lead to better identification practices and provide more accurate counts of handicapped students for purposes of allocating Federal dollars and for comparing the eligible population across states.
- The findings point to the need for further understanding of the longitudinal changes that occur across particular handicapping conditions and that may account for the dramatic drop off in potential need from childhood to adolescence.
- The findings underscore the importance of the federal requirement for multiple assessment of youth prior to placement in special education programs. Single indicators of need for special education services--whether teacher, parent, or test assessments--should be highly suspect.

Table 2

CHILDREN AND YOUTH FOR WHOM TEACHERS RECOMMENDED SPECIAL EDUCATIONAL RESOURCES (BY HANDICAP)

Handicap	Children 6-11 years (Percentage)	Youth 12-17 years (Percentage)
Hard of hearing	1.0%	.3%
Sight-saving*	1.4	.2
Orthopedic	.3	.2
Mentally retarded	1.2	1.3
Emotionally disturbed	3.4	1.2
Speech	6.2	1.1
Subtotal	13.5	4.3
Slow Learner†	13.1	5.3
Subtotal	26.6	9.6
None	73.4	90.4
TOTAL	100.0	100.0

*For youth: "Visually handicapped."

†For youth: "Slow learners not classified as mentally retarded."

Table 3

MAKE-UP OF THE NCHS DATA BASE FOR YOUTH (AGES 12-17)
EXTRAPOLATED TO THE ENTIRE POPULATION

Characteristic	Percentage of Youth	Number of Youth (000,000)
Total	100.0%	226.9
Sex		
Males	50.6	114.9
Females	49.4	112.0
	100.0	226.9
Race		
Black	13.3	30.2
White (including "other")	86.7	196.7
	100.0	226.9
Family income		
Under $3,000	11.8	26.8
$3,000-$4,999	13.4	30.5
$5,000-$6,999	15.5	35.2
$7,000-$9,999	22.8	51.8
$10,000-$14,999	19.3	43.7
$15,000 and over	10.7	24.2
Don't know/no response	6.5	14.8
	100.0	227.0*
Age		
12 years	17.6	40.0
13 years	17.4	39.5
14 years	17.0	38.5
15 years	16.5	37.5
16 years	16.0	36.2
17 years	14.5	33.0
18 years (by end of study)	.9	2.1
	99.9*	226.8*
Region of the country		
Northeast	22.2	50.3
Midwest	28.6	64.9
South	23.6	53.6
West	25.6	58.2
	100.0	227.0*
Type of place		
Rural	36.3	82.4
Urban, under 50,000 people	13.8	31.4
50,000-250,000 people	6.5	14.7
250,000-3 million people	24.7	56.0
Over 3 million people	18.7	42.4
	100.0	226.9

*Does not add due to rounding.

Table 4

POPULATION CHARACTERISTICS OF YOUTH (AGES 12-17) IN SCHOOL AND NOT IN SCHOOL IN THE NCHS CYCLE III DATA BASE EXTRAPOLATED TO THE ENTIRE POPULATION

Characteristic	Percentage of Youth			Number of Youth (000,000)		
	In School			In School		
	With Data	Without Data	Not in School	With Data	Without Data	Not in School
Total	100.0%	100.0%	100.0%	207.9	13.0	6.1
Sex						
Males	50.8	48.5	48.8	105.6	6.3	3.0
Females	49.2	51.5	51.2	102.2	6.7	3.1
	100.0	100.0	100.0	207.8*	13.0	6.1
Race						
Black	12.2	27.6	22.5	25.3	3.6	1.4
White (including "other")	87.8	72.4	77.5	182.6	9.4	4.7
	100.0	100.0	100.0	207.9	13.0	6.1
Family income						
Under $3,000	10.8	19.6	31.3	22.4	2.5	1.9
$3,000-$4,999	12.7	19.7	26.9	26.3	2.6	1.6
$5,000-$6,999	15.7	13.9	10.9	32.7	1.8	.7
$7,000-$9,999	23.3	19.8	11.4	48.5	2.6	.7
$10,000-$14,999	20.0	12.3	9.0	41.5	1.6	.5
$15,000 and over	11.2	6.0	.5	23.4	.8	.0
Don't know/no response	6.3	8.6	10.0	13.0	1.1	.6
	100.0	99.9*	100.0	207.8*	13.0	6.0*
Age						
12 years	18.2	16.2	1.0	37.9	2.1	.1
13 years	18.0	16.2	1.1	37.3	2.1	.1
14 years	17.3	17.3	4.7	36.0	2.2	.3
15 years	16.7	18.5	6.7	34.7	2.4	.4
16 years	15.6	15.9	29.4	32.4	2.1	1.8
17 years	13.5	15.4	47.4	28.1	2.0	2.9
18 years (by end of study)	.7	.5	9.8	1.5	.1	.6
	100.0	100.0	100.1*	207.9	13.0	6.2*
Region of the country						
Northeast	21.9	27.6	20.9	45.5	3.6	1.3
Midwest	29.3	22.5	17.3	60.9	2.9	1.1
South	22.3	34.9	43.1	46.4	4.5	2.6
West	26.5	15.1	18.8	55.1	2.0	1.1
	100.0	100.1*	100.1*	207.9	13.0	6.1
Type of place						
Rural	36.5	31.7	40.1	75.8	4.1	2.4
Urban, under 50,000 people	14.3	5.1	15.2	29.8	.7	.9
50,000-250,000 people	6.3	7.0	11.2	13.2	.9	.7
250,000-3 million people	24.6	29.0	16.8	51.2	3.8	1.0
Over 3 million people	18.2	27.2	16.6	37.9	3.5	1.0
	99.9*	100.0	99.9*	207.9	13.0	6.0*

*Does not add due to rounding.

Table 5

RATES OF THE POTENTIAL NEED FOR SPECIAL RESOURCES IN THE 12-17 YEAR OLD POPULATION USING VARIOUS INDICATOR SETS BY HANDICAP

Indicator Set	Handicap						
	Hearing	Vision	Orthopedic	Mental Retardation	Emotional Disturbance	Speech	Slow Learner/Not Mentally Retarded
Teacher recommendation	.26%	.23%	.17%	1.33%	1.20%	1.12%	5.26%
Parent responses	3.63	na	2.05	3.56	1.68	4.22	na
Test data:							
Audiometry test							
Moderate	.30	--	--	--	--	--	--
Severe	.15	--	--	--	--	--	--
Vision test							
Moderate	--	.75	--	--	--	--	--
Severe	--	.35	--	--	--	--	--
IQ Test	--	--	--	1.96	--	--	na

na - No data were deemed appropriate for this indicator

-- Not applicable to the identification of this handicapping condition.

Table 6

EXTENT OF AGREEMENT BETWEEN INDICATORS OF POTENTIAL NEED FOR SPECIAL RESOURCES BY HANDICAP

Indicator Set A Compared with (X) Indicator Set B	Percent of Total Population (100%)				Percent of Those Identified (100%)		
	Yes A Only	Yes B Only	Both A & B	Neither	Yes A Only	Yes B Only	Both A & B
Hearing Handicap							
Teacher recommendation (A) X Parent responses (B)	.1%	3.5%	.2%	96.3%	3%	93%	4 %
Teacher recommendation (A) X Audiometric test* (B)	.3	.3	.0†	99.4	46	51	3
Teacher recommendation (A) X Audiometric test** (B)	.3	.2	--	99.6	64	36	--
Parent responses (A) X Audiometric test* (B)	3.6	.2	.1	96.1	92	6	2
Parent responses (A) X Audiometric test** (B)	3.6	.1	.0†	96.2	96	4	.3
Vision Handicap							
Teacher recommendation (A) X Visual acuity test* (B)	.7	.2	.1	99.1	75	18	7
Teacher recommendation (A) X Visual acuity test** (B)	.3	.2	.1	99.5	56	32	12
Orthopedic Handicap							
Teacher recommendation (A) X Parent responses (B)	.1	2.0	.1	97.8	5	92	3

*Moderate level.

**Severe level.

†Indicates less than .05%.

Table 6 (Concluded)

Indicator Set A Compared with (X) Indicator Set B	Percent of Total Population (100%)				Percent of Those Identified (100%)		
	Yes A Only	Yes B Only	Both A & B	Neither	Yes A Only	Yes B Only	Both A & B
Mental Retardation							
Teacher recommendation (A) X IQ test (B)	.9%	1.6%	.4%	97.1%	31%	54%	14%
Teacher recommendation (A) X Parent responses (B)	.9	3.1	.4	95.6	20	71	9
Parent responses (A) X IQ Test (B)	3.0	1.3	.5	95.1	62	27	11
Emotional Disturbance							
Teacher recommendation (A) X Parent responses (B)	.9	1.4	.2	97.4	35	56	9
Speech Handicap							
Teacher recommendation (A) X Parent responses (B)	.6	3.7	.5	95.2	12	77	11

*Moderate level.

**Severe level.

†Indicates less than .05%.

Table 7

SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF YOUTH IDENTIFIED AS POSSIBLY NEEDING SPECIAL RESOURCES FOR THE HARD OF HEARING

Characteristic	Number of Youth in U.S.*	Percent Identified by Various Risk Factors (Standard Error)			
		Teacher Recommendation†	Parent Responses†	Audiometry Test: Moderate and Severe Level**	Audiometry Test: Severe Level ††
Total	207.9	.26 (.09)	3.63 (.29)	.30 (.10)	.15 (.08)
Race					
Black	25.3	.53 (.34)‡	4.85 (.55)	.25 (.19)‡	--§
White (includes "other")	182.6	.23 (.09)	3.46 (.35)	.31 (.11)	.18 (.09)
Sex					
Male	105.6	.40 (.16)	3.60 (.32)	.22 (.09)	.05 (.04)‡
Female	102.2	.12 (.07)‡	3.66 (.45)	.39 (.17)	.26 (.15)
Family income					
Less than $3,000	22.4	.38 (.28)‡	6.99 (.77)	.93 (.31)	.31 (.23)‡
$3,000 to $4,999	26.3	.28 (.20)‡	3.79 (.70)	.12 (.12)‡	--
$5,000 to $6,999	32.7	.49 (.20)‡	3.39 (.50)	.45 (.19)‡	.27 (.16)‡
$7,000 to $9,999	48.5	.41 (.29)	3.91 (.70)	.12 (.08)‡	.05 (.05)‡
$10,000 to $14,999	41.5	.08 (.08)‡	2.21 (.49)	.39 (.34)‡	.33 (.34)‡
$15,000 and above	23.4	--§	1.49 (.48)	.10 (.09)‡	--§
Don't know/no response	13.0	--§	5.43(1.53)	--§	--§
Age					
12-13	75.2	.28 (.12)	2.89 (.35)	.38 (.16)	.11 (.07)‡
14-15	70.7	.17 (.13)‡	4.44 (.38)	.14 (.07)‡	.05 (.05)‡
16-17	62.0	.36 (.24)	3.60 (.61)	.38 (.24)	.32 (.24)‡
Region					
Northeast	45.5	.19 (.11)‡	2.41 (.30)	.30 (.18)‡	.20 (.15)‡
Midwest	60.9	.16 (.11)‡	3.19 (.46)	.21 (.10)‡	.11 (.07)‡
South	46.4	.46 (.24)	5.53 (.64)	.65 (.30)	.36 (.29)‡
West	55.1	.28 (.25)‡	3.52 (.59)	.12 (.11)‡	--§
Type of place					
Rural	75.8	.09 (.06)‡	3.95 (.58)	.12 (.09)‡	.03 (.03)‡
Urban, under 50,000	29.8	.09 (.10)‡	3.91 (.52)	.77 (.53)	.45 (.46)‡
50,000-250,000 people	13.2	.65 (.67)‡	4.49 (.80)	.54 (.36)‡	.18 (.15)‡
250,000-3 million	51.2	.62 (.28)	3.38 (.56)	.27 (.17)‡	.21 (.13)‡
Over 3 million people	37.9	.13 (.09)‡	2.80 (.45)	.23 (.06)‡	.08 (.07)‡

*In hundred thousands.

†Includes all children so identified, whether or not those children were also identified by another set of indicators.

‡Sample too small to permit drawing valid conclusions.

§No observations in category.

**>30 dB (ASA) above audiometric zero for speech threshold in the better ear, moderate and severe level of impairment.

††>50 dB (ASA) above audiometric zero for speech threshold in the better ear, severe level of impairment.

Table 8

SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF YOUTH IDENTIFIED AS POSSIBLY NEEDING SPECIAL RESOURCES FOR THE VISUALLY HANDICAPPED

Characteristic	Number of Youth in U.S.*	Percent Identified by Various Risk Factors (Standard Error)		
		Teacher Recommendation†	Vision Test	
			Moderate**	Severe††
Total	207.9	.23 (.06)	.75 (.14)	.35 (.07)
Race				
Black	25.3	.62 (.43)‡	1.43 (.58)	.63 (.29)
White (includes "other")	182.6	.18 (.06)	.65 (.15)	.32 (.06)
Sex				
Male	105.6	.24 (.05)	.62 (.17)	.28 (.10)
Female	102.2	.22 (.10)	.87 (.18)	.44 (.10)
Family income				
Less than $3,000	22.4	--§	.67 (.30)‡	.38 (.22)‡
$3,000 to $4,999	26.3	.48 (.33)‡	1.28 (.57)	.82 (.38)
$5,000 to $6,999	32.7	.38 (.14)‡	1.16 (.45)	.44 (.23)‡
$7,000 to $9,999	48.5	.19 (.12)‡	.69 (.18)	.33 (.14)‡
$10,000 to $14,999	41.5	.21 (.21)‡	.48 (.21)‡	.15 (.11)‡
$15,000 and above	23.4	.09 (.09)‡	.52 (.38)‡	.15 (.15)‡
Don't know/no response	13.0	.22 (.21)‡	.24 (.24)‡	.24 (.24)‡
Age				
12-13	75.2	.20 (.11)‡	.83 (.16)	.45 (.12)
14-15	70.7	.33 (.06)	.84 (.24)	.45 (.15)
16-17	62.0	.15 (.09)‡	.54 (.19)	.12 (.08)‡
Region				
Northeast	45.5	.53 (.23)	.69 (.16)	.44 (.15)
Midwest	60.9	.22 (.08)‡	.70 (.17)	.35 (.11)‡
South	46.4	.22 (.12)‡	.71 (.29)	.38 (.19)‡
West	55.1	--§	.87 (.39)	.26 (.11)‡
Type of place				
Rural	75.8	.08 (.05)‡	.84 (.21)	.39 (.12)
Urban, under 50,000	29.8	.09 (.09)‡	.76 (.40)	.40 (.21)‡
50,000-250,000 people	13.2	--§	.45 (.30)‡	.17 (.15)‡
250,000-3 million	51.2	.39 (.15)‡	.70 (.20)	.26 (.13)‡
Over 3 million people	37.9	.50 (.24)	.70 (.22)	.43 (.18)‡

*In hundred thousands.

†Includes all children so identified, whether or not those children were also identified by another set of indicators.

‡Sample too small to permit drawing valid conclusions.

§No observations in category.

**Corrected visual acuity <20/100 moderate and severe level of impairment.

††Corrected visual acuity <20/200 severe level of impairment.

Table 9

SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF YOUTH IDENTIFIED AS POSSIBLY NEEDING SPECIAL RESOURCES FOR THE ORTHOPEDICALLY HANDICAPPED

Characteristic	Number of Youth in U.S.*	Percent Identified by Various Risk Factors (Standard Error)	
		Teacher Recommendation†	Parent Responses†
Total	207.9	.17 (.07)	2.05 (.30)
Race			
Black	25.3	.10 (.11)‡	1.47 (.50)
White (includes "other")	182.6	.18 (.08)	2.13 (.34)
Sex			
Male	105.6	.08 (.05)‡	2.33 (.36)
Female	102.2	.26 (.15)	1.77 (.38)
Family income			
Less than $3,000	22.4	--§	1.54 (.48)
$3,000 to $4,999	26.3	.27 (.19)‡	1.71 (.41)
$5,000 to $6,999	32.7	.18 (.12)‡	1.88 (.54)
$7,000 to $9,999	48.5	.10 (.07)‡	2.00 (.41)
$10,000 to $14,999	41.5	.32 (.33)‡	2.53(1.08)
$15,000 and above	23.4	.13 (.13)‡	2.11 (.68)
Don't know/no response	13.0	--§	2.64 (.74)
Age			
12-13	75.2	.17 (.06)	1.47 (.30)
14-15	70.7	.31 (.20)	1.83 (.27)
16-17	62.0	--§	3.02 (.65)
Region			
Northeast	45.5	--§	2.37 (.37)
Midwest	60.9	.33 (.19)‡	1.37 (.24)
South	46.4	.16 (.11)‡	2.46(1.05)
West	55.1	.13 (.08)‡	2.20 (.65)
Type of place			
Rural	75.8	.04 (.04)‡	2.65 (.72)
Urban, under 50,000	29.8	.45 (.51)‡	1.27 (.30)
50,000-250,000 people	13.2	.34 (.39)‡	.75 (.48)‡
250,000-3 million	51.2	.26 (.09)‡	1.92 (.11)
Over 3 million people	37.9	--§	2.12 (.19)

*In hundred thousands.

†Includes all children so identified, whether or not those children were also identified by another set of indicators.

‡Sample too small to permit drawing valid conclusions.

§No observations in category.

Table 10

SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF YOUTH IDENTIFIED AS POSSIBLE CANDIDATES FOR SERVICES FOR THE MENTALLY RETARDED

Characteristic	Number of Youth in U.S.*	Percent Identified by Various Risk Factors (Standard Error)		
		Teacher Recommendation†	Parent Responses†	I.Q. Test†
Total	207.9	1.33 (.19)	3.56 (.37)	1.96 (.31)
Race				
Black	25.3	3.65 (.84)	6.44 (.86)	6.35 (1.35)
White (includes "Other")	182.6	1.01 (.18)	3.16 (.40)	1.36 (.27)
Sex				
Male	105.6	1.86 (.32)	4.99 (.53)	1.49 (.35)
Female	102.2	.79 (.16)	2.08 (.37)	2.45 (.41)
Family Income				
Less than $3,000	22.4	3.10 (.64)	5.69 (1.16)	7.7[illegible] (1.39)
$3,000 to $4,999	26.3	3.04 (.72)	4.25 (.71)	2.86 (.62)
$5,000 to $6,999	32.7	2.14 (.30)	4.67 (.79)	2.22 (.50)
$7,000 to $9,999	48.5	.67 (.26)	3.11 (.69)	.64 (.28)
$10,000 to $14,999	41.5	.18 (.13) ‡	2.37 (.37)	.26 (.14)
$15,000 and above	23.4	.15 (.15) ‡	1.64 (.54)	.15 (.15)
Don't know/no response	13.0	1.06 (.44) ‡	4.59 (1.19)	3.13 (.84)
Age				
12-13	75.2	1.42 (.22)	4.41 (.56)	1.92 (.35)
14-15	70.7	1.62 (.34)	3.63 (.54)	2.10 (.44)
16-17	62.0	.90 (.23)	2.43 (.47)	1.85 (.43)
Region				
Northeast	45.5	1.23 (.36)	2.58 (.42)	1.03 (.24)
Midwest	60.9	1.02 (.34)	2.55 (.31)	.55 (.1[illegible])
South	46.4	1.23 (.28)	4.71 (1.03)	4.50 (1.11)
West	55.1	1.85 (.35)	4.49 (.88)	2.15 (.63)
Type of place				
Rural	75.8	1.26 (.27)	3.30 (.65)	2.45 (.64)
Urban, under 50,000	29.8	1.45 (.38)	3.53 (.61)	2.57 (.65)
50,000-250,000 people	13.2	1.40 (.33)	3.44 (1.09)	1.59 (.74)
250,000-3 million	51.2	1.20 (.31)	4.36 (.72)	1.53 (.43)
Over 3 million people	37.9	1.53 (.34)	3.05 (.24)	1.21 (.20)

*In hundred thousands.

†Includes all children so identified, whether or not those children were also identified by another set of indicators.

‡Sample too small to permit drawing valid conclusions.

Table 11

SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF YOUTH IDENTIFIED AS POSSIBLY NEEDING SPECIAL RESOURCES FOR THE EMOTIONALLY DISTURBED

Characteristics	Number of Youth in U.S.*	Percent Identified by Various Risk Factors (Standard Error)	
		Teacher Recommendation†	Parent Responses†
Total	207.9	1.20 (.13)	1.68 (.15)
Race			
Black	25.3	1.32 (.28)	2.27 (.35)
White (includes "other")	182.6	1.18 (.15)	1.60 (.17)
Sex			
Male	105.6	1.66 (.21)	2.32 (.24)
Female	102.2	.71 (.20)	1.03 (.21)
Family income			
Less than $3,000	22.4	2.14 (.52)	2.45 (.64)
$3,000 to $4,999	26.3	1.00 (.30)	2.34 (.51)
$5,000 to $6,999	32.7	1.59 (.49)	1.55 (.44)
$7,000 to $9,999	48.5	1.03 (.32)	1.46 (.33)
$10,000 to $14,999	41.5	.75 (.20)	1.20 (.27)
$15,000 and above	23.4	.92 (.40)‡	1.52 (.64)
Don't know/no response	13.0	1.54 (.69)	2.11 (.70)
Age			
12-13	75.2	1.53 (.24)	1.54 (.18)
14-15	70.7	1.26 (.27)	1.87 (.28)
16-17	62.0	.71 (.26)	1.62 (.37)
Region			
Northeast	45.5	1.36 (.35)	1.60 (.23)
Midwest	60.9	1.28 (.19)	1.27 (.27)
South	46.4	1.08 (.18)	2.06 (.30)
West	55.1	1.06 (.23)	1.87 (.39)
Type of place			
Rural	75.8	.67 (.16)	1.58 (.19)
Urban, under 50,000	29.8	.67 (.30)‡	1.17 (.23)
50,000-250,000 people	13.2	1.57 (.55)	1.87 (.57)
250,000-3 million	51.2	2.05 (.29)	2.07 (.39)
Over 3 million people	37.9	1.38 (.30)	1.66 (.26)

*In hundred thousands.

†Includes all children so identified, whether or not those children were also identified by another set of indicators.

‡Sample too small to permit drawing valid conclusions.

Table 12

SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF YOUTH IDENTIFIED AS POSSIBLY NEEDING SPEECH THERAPY

Characteristics	Number of Youth in U.S.*	Percent Identified by Various Risk Factors (Standard Error)	
		Teacher Recommendation†	Parent Responses†
Total	207.9	1.12 (.18)	4.22 (.25)
Race			
Black	25.3	1.38 (.36)	9.46 (.63)
White (includes "Other")	182.6	1.08 (.21)	3.49 (.25)
Sex			
Male	105.6	1.26 (.24)	5.18 (.39)
Female	102.2	.97 (.24)	3.22 (.34)
Family Income			
Less than $3,000	22.4	2.36 (.61)	7.09 (.81)
$3,000 to $4,999	26.3	1.57 (.48)	6.06 (.80)
$5,000 to $6,999	32.7	.74 (.29)	4.02 (.57)
$7,000 to $9,999	48.5	.55 (.23)	3.94 (.44)
$10,000 to $14,999	41.5	1.31 (.46)	2.81 (.52)
$15,000 and above	23.4	.59 (.30) ‡	2.17 (.57)
Don't know/no response	13.0	1.46 (.72) ‡	5.26(1.33)
Age			
12-13	75.2	1.58 (.31)	5.24 (.53)
14-15	70.7	.98 (.25)	3.92 (.45)
16-17	62.0	.72 (.23)	3.33 (.46)
Region			
Northeast	45.5	.88 (.33)	3.76 (.53)
Midwest	60.9	1.45 (.41)	3.59 (.19)
South	46.4	1.65 (.32)	5.47 (.55)
West	55.1	.50 (.26)	4.24 (.64)
Type of place			
Rural	75.8	1.14 (.25)	4.15 (.43)
Urban, under 50,000	29.8	1.18 (.56) ‡	4.28 (.87)
50,000-250,000 people	13.2	1.20 (.27) ‡	4.31 (.67)
250,000-3 million	51.2	.85 (.32)	3.49 (.37)
Over 3 million people	37.9	1.35 (.27)	5.25 (.44)

*In hundred thousands.

†Includes all children so identified, whether or not those children were also identified by another set of indicators.

‡Sample too small to permit drawing valid conclusions.

Table 13

SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF YOUTH IDENTIFIED AS POSSIBLE CANDIDATES FOR SERVICES FOR THE SLOW LEARNER

Characteristic	Number of Youth In U.S.*	Percent Identified by Teacher Recommendation (Standard Error)+	
		Only Slow**	Slow and Other Special Resource
Total	207.9	4.80 (.43)	.46 (.11)
Race			
Black	25.3	8.51 (1.33)	.78 (.37)
White (includes "other")	182.6	4.28 (.46)	.42 (.11)
Sex			
Male	105.6	5.77 (.59)	.62 (.16)
Female	102.2	3.79 (.47)	.30 (.15)
Family income			
Less than $3,000	22.4	7.95 (1.16)	1.08 (.37)
$3,000 to $4,999	26.3	7.69 (.95)	.87 (.54)
$5,000 to $6,999	32.7	5.44 (.73)	.70 (.36)
$7,000 to $9,999	48.5	4.46 (.65)	.30 (.24)#
$10,000 to $14,999	41.5	2.02 (.42)	.15 (.11)#
$15,000 and above	23.4	1.98 (.46)	--§
Don't know/no response	13.0	7.10 (2.17)	.38 (.26)
Age			
12-13	75.2	5.82 (.57)	.54 (.19)
14-15	70.7	4.99 (.58)	.42 (.15)
16-17	62.0	3.32 (.56)	.42 (.21)
Region			
Northeast	45.5	3.19 (.72)	.31 (.11)
Midwest	60.9	4.09 (.64)	.28 (.15)#
South	46.4	4.62 (.37)	.80 (.38)
West	55.1	7.05 (1.29)	.50 (.20)
Type of place			
Rural	75.8	3.75 (.58)	..37 (.21)
Urban, under 50,000	29.8	4.79 (1.07)	.31 (.12)#
50,000-250,000 people	13.2	9.37 (2.32)	.78 (.29)#
250,000-3 million	51.2	5.83 (.85)	.76 (.25)
Over 3 million people	37.9	3.92 (.99)	.25 (.13)#

*In hundred thousands.

+Includes all children so identified, whether or not those children were also identified by another set of indicators.

#Sample too small to permit drawing valid conclusions.

§No observations in category.

**Slower learner, not otherwise classed as mentally retarded.

Table 14

SIGNIFICANT DIFFERENCES IN RATES OF IDENTIFICATION FOR POTENTIAL NEED FOR SPECIAL EDUCATIONAL SERVICES ACROSS DEMOGRAPHIC AND SOCIOECONOMIC GROUPS

Handicap	Teacher Recommendation	Parent Responses	Test Information
Hearing	NS	Race: B > W Income: Under $3K > $3-4.9K " 3K > $5-6.9K " 3K > $7-9.9K " 3K > $10-14.9K " 3K over $15K Age: 14-15 > 12-13 Region: S > NE S > MW	NS
Vision	NS	-*	NS
Orthopedic	NS	NS	-*
Mental retardation	Race: B > W Sex: M > F Income: Under $3K > $7-9.9K " $3K-4.9K > $7-9.9K " $5K-6.9K > $7-9.9K	Race: B > W Sex: M > F Income: Under $3K over $15K Under $3-4.9K over $15K Under $5-6.9K over $15K Age: 12-13 > 16-17	Race: B > W Income: Under $3K > $3-4.9K " $3K > $5-6.9K " $3K > $7-9.9K Region: S > NE S > MW
Emotional disturbance	Sex: M > F Place: 250,000-3 million > Rural	Sex: M > F	-*
Speech	Region: S > W	Race: B > W Sex: M > F Income: Under $3K > $5-6.9K " $3K > $7-9.9K " $3K > $10-14.9K " $3K > over $15K $3-4.9K > $10-14.9K $3-4.9K > over $15K Age: 12-13 > 16-17 Region: S > MW Place: Over 3 million > 250,000-3 million	-*

Table 14 (Concluded)

SIGNIFICANT DIFFERENCES IN RATES OF IDENTIFICATION FOR POTENTIAL NEED FOR SPECIAL EDUCATIONAL SERVICES ACROSS DEMOGRAPHIC AND SOCIOECONOMIC GROUPS

Handicap	Teacher Recommendation	Parent Responses	Test Information
Slow learners	Race: B > W Sex: M > F Income: Under $3K > $10-14.9K " $3K > over $15K $3-4.9K > $10-14.9K $3-4.9K > over $15K $5-6.9K > $10-14.9K $5-6.9K > over $15K $7-9.9K > $10-14.9K $7-9.9K > over $15K Age: 12-13 > 16-17	-*	-*

* -No indicator available.

NS-No significant differences were found among socioeconomic and demographic groups as identified by this indicator.

Table 15

RATES OF THE POTENTIAL NEED FOR SPECIAL RESOURCES FOR CHILDREN AND YOUTH BY INDICATOR AND HANDICAP

	Handicap						
	Hearing	Vision	Orthopedic	Mental Retardation	Emotional Disturbance	Speech	Slow Learner
Teacher Recommendation							
Children	1.0%	1.5%	.4%	1.2%	3.4%	6.3%	13.1%*
Youth	.3	2.3	.2	1.3	1.2	1.1	5.3*
Parent Responses							
Children	4.2	na	3.0*	1.1*	4.2*	8.2*	na
Youth	3.6	na	2.1*	3.6*	1.7*	4.2*	na
Test Information							
Children	.1	2.7*	na	1.7	na	na	na
Youth	.3	.4*	na	2.0	na	na	na

*These rates are not directly comparable because criteria used as possible indicators were different for each age cohort.

na - No indicator available.

Table 16

COMPARISON OF SIGNIFICANT DIFFERENCES ACROSS SOCIOECONOMIC AND DEMOGRAPHIC GROUPS FOR CHILDREN AND YOUTH

Handicap	Sex (Boys > Girls)		Race (Blacks > Whites)		Income (Low > High Income)		Age (Older > Younger)		Region (South > Other Regions)	
	Children	Youth	Children	Youth	Children	Youth	Children	Youth	Children	Youth
Hearing										
Teacher recommendation										
Parent responses				X	X	X		X	X	X
Audiometric test										
Vision										
Teacher recommendation							X		X	
Orthopedic										
Teacher recommendation										
Mental Retardation										
Teacher recommendation	X	X	X	X		X	X			
IQ test results			X	X	X	X	X	X		X
Emotional Disturbance										
Teacher recommendation	X	X	X				X			
Speech										
Teacher recommendation	X						X*			X

*Younger > older